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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,581	02/28/2002	Robert Dalgleish	13914RRUS01U (22171.311)	9025

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HAYNES AND BOONE, LLP
901 MAIN STREET, SUITE 3100
DALLAS, TX 75202

EXAMINER	
AMINZAY, SHAIMA Q	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,581	DALGLEISH ET AL.	
	Examiner	Art Unit	
	Shaima Q. Aminzay	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: Application Filed: 02/28/2002.
2. Independent Claims 1, 11, 16, and dependent claims 2-10, 12-15, 16-21, and 17-20 are pending in the case.
3. The present title of the application is "Low power transponder circuit".

NON-FINAL ACTION

Claim Rejections - 35 USC § 103

◆ The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

◆ Claims 1-27 are rejected under 35 U.S.C.103(a) as being unpatentable over Ito et al. U. S. Patent 6690915 in view of Komara et al. U. S. Patent 6339694, and further in view of Grandfield et al. U. S. Patent 5802452.

4. Regarding claims 1, 2, 5, 11, 12, and 13, Ito teaches automatically configuring a first gain and a second gain of a repeater in a telecommunications system (see for example, Figure 1, column 1, lines 10-16, column 10, lines 51-53, and column12, lines 19-32, the automatically gain control system (column 12, lines

20-23) and first gain (downlink) and a second gain (uplink) of a repeater (booster performs the same function as a repeater)), and the repeater operable to receive data from a transceiver via a downlink channel associated with the first gain and to send data to the transceiver via an uplink channel associated with the second gain (see for example, Figure 1, column 11, lines 22-41, the booster receives data from transceivers (180 and 182) via downlink associated with the first gain (see for example column 12, lines 28-32) and sends data to transceivers (180 and 182) via uplink (column 11, lines 34-41) associated with the second gain (see for example, column 12, lines 25-28), and, adjusting the first gain so that the power level is within a predetermined range of the reference power level (see for example, column 3, lines 40-44, and column 11, lines 22-33, the first gain (downlink) is adjusted using the reference signal (predetermined signal from the base station)), and adjusting the second gain to equal the first gain so that a balance can be automatically achieved between a coverage area of the repeater and a level of noise associated with the uplink channel and incrementally adjusting the gain (see for example, column 12, lines 20-50, the second gain (downlink) is adjusted and being balance by automatically controlling the gain and noise level between a coverage area, and further, column 2, lines 35-67 continued to column 3, lines 1-28, adjusting the gain).

However, Ito does not teach sampling the power level and comparing the power level to a reference power level.

Komara teaches sampling the power level (see for example, Figure 7 (ALC,

704), column 2, lines 49-67, column 10, lines 20-21, and lines 54-55, the Automatic Level Control is a power level sampling technique used in both the downlink and uplink paths of the repeater).

However, Komara does not teach comparing the power level to a reference power level.

Grandfield teaches comparing the power level to a reference power level (see for example, column 2, lines 60-67 continued to column 3, lines 1-17).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Grandfield's multiple channel RF repeater automatic gain controller with Komara's mobile repeater sampling power level and with Ito's booster (repeater) noise and gain controller for mobile and base stations (see for example, column 2, lines 18-45) to provide a telecommunication system repeater with self-adjusting power level controller that is safe to be used with the expensive high power repeater unit (Komara, see for example, column 7, lines 27-39, and column 3, lines 54-60), and "to provide multiple high data rate channels that can be controlled without generating interference between each channel, while also optimizing the RF output power" (Grandfield, column 1, lines 38-44).

5. Regarding claim 3, Ito, Komara, Grandfield teach claim 1, and further Ito teaches the perch signal (perch signal is equivalent to "pilot" signal) or any other signal as reference signal (column 12, lines 5-9, and column 11, lines 53-55).

6. Regarding claim 4, Ito, Komara, Grandfield teach claim 3, and further Komara teaches demodulating the signal (see for example, column 8, lines 16-19).

7. Regarding claim 5, Ito, Komara, Grandfield teach claim 1, and further Ito teaches the downlink channel and uplink channel use different frequencies (see for example, column 12, lines 11-50, the downlink channel and uplink channel use different frequencies that are used to calculate the noise level (column 12, lines 10-18) and the uplink and downlink signal gain (column 12, lines 32-50)).

8. Regarding claims 6, and 7, Ito, Komara, Grandfield teach claim 5, and further Ito teaches the first gain/frequency (uplink) and the second gain/frequency (downlink) and may different from each other and the controller monitors to keep the gain value within acceptable value to prevent the effect on the transmission power control of the base station and the mobile station (see for example, column 12, lines 32-50).

9. Regarding claims 8, 10, 14, and 15, Ito, Komara, Grandfield teach claims 1, 11, and further Ito teaches the minimum and maximum gain with upper and lower values and ensuring that the repeater is capable of supporting the gain (see for example, column 12, lines 32-40, and column 16, lines 21-24).

10. Regarding claim 9, Ito, Komara, Grandfield teach claim 1, and further Ito teaches plurality of other signals on the downlink channel with the first gain (see for example, Figure 1, more than one base station (180, and 182)).

11. Regarding claim 20, Ito, Grandfield teach claim 16. However, Ito, Grandfield do not teach demodulating the signal.

Komara teaches demodulating the signal (see for example, column 8, lines 16-19).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Grandfield's multiple channel RF repeater automatic gain controller with Ito's booster (repeater) noise and gain controller for mobile and base stations (see for example, column 2, lines 18-45) to provide telecommunication repeater with "multiple high data rate channels that can be controlled without generating interference between each channel, while also optimizing the RF output power" (Grandfield, column 1, lines 38-44).

◆ Claims 16-19 are rejected under 35 U.S.C.103(a) as being unpatentable over Ito et al. U. S. Patent 6690915, and in view of Grandfield et al. U. S. Patent 5802452.

12. Regarding claims 16, 17, Ito teaches a self-configuring repeater for use in a telecommunications network (see for example, Figure 1, column 1, lines 10-16, column 10, lines 51-53, and column12, lines 19-32, the self-configuring (automatically gain control) booster (booster performs the same function as a repeater) in a telecommunication network), and the repeater operable to receive data from a base station via a downlink channel and to send data to the base station via an uplink channel (see for example, Figure 1 (180, 182, 130, 132, and 190), column 11, lines 22-41, column 12, lines 28-32, the booster receives data from transceivers (180 and 182) and sends data to transceivers (180 and 182)

via uplink from a mobile station (190), and a first amplifier chain operable to apply a first gain to a first signal received via the downlink channel (see for example, Figure 1 (180, 182, 130, 132, and 190), column 11, lines 27-33, column 12, lines 28-32, the first amplifier 144 and gain control setting transferred (Figure 1 (112, 114, 108)), and second amplifier chain operable to apply a second gain to a second signal to be sent via the uplink channel (see for example, Figure 1 (180, 182, 130, 132, and 190), column 11, lines 34-41, column 12, lines 28-32, the second amplifier 116 and gain control setting transferred (Figure 1 (112, 116, 110)), and adjust the first gain so that the power level of the first signal falls within a predetermined range of the reference power level (see for example, column 3, lines 40-44, and column 11, lines 22-33, the first gain (downlink) is adjusted using the reference signal (predetermined signal from the base station)) and adjust the second gain to equal the first gain so that a balance can be automatically achieved between a coverage area of the repeater and a level of noise associated with the uplink channel and incrementally adjusting the gain (see for example, column 12, lines 20-50, the second gain (downlink) is adjusted and being balance by automatically controlling the gain and noise level between a coverage area, and further, column 2, lines 35-67 continued to column 3, lines 1-28, adjusting the gain)

However, Ito does not teach a comparator to compare the power level to a reference power level.

Grandfield teaches a comparator to compare the power level to a reference

power level (see for example, column 2, lines 60-67 continued to column 3, lines 1-24, the comparator 21 and predetermined voltage level).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Grandfield's multiple channel RF repeater automatic gain controller with Ito's booster (repeater) noise and gain controller for mobile and base stations (see for example, column 2, lines 18-45) to provide telecommunication repeater with "multiple high data rate channels that can be controlled without generating interference between each channel, while also optimizing the RF output power" (Grandfield, column 1, lines 38-44).

13. Regarding claims 18, Ito, Grandfield teach claim 17, and further, Ito teaches a first antenna (Figure 1 (180)) and second antenna (Figure 1 (132)), and a first duplexer (Figure 1 (126)) positioned between the first amplifier (Figure 1 (124)) and the first antenna (Figure 1 (180)),and a second duplexer (Figure 1 (128)) positioned between the second amplifier (Figure 1 (116)) and the gain balancer from being transmitted via the first and second antennas (see for example, Figure 1, variable attenuator 110, and 108).

14. Regarding claims 19, Ito, Grandfield teach claim 16, and further, Ito teaches the first amplifier (Figure 1(114)), and first attenuator (Figure 1 (108)), and a second amplifier (Figure 1 (116)), and a second attenuator (Figure 1, 110).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

Inquiry

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shaima Q. Aminzay
(Examiner)

July, 15, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER

Nay Maung
(SPE)
Art Unit 2684